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**Team of Specialists on Environmental, Social and Governance Traceability
of Sustainable Value Chains in the Circular Economy**

Report of the Team of Specialists on Environmental, Social and Governance Traceability of Sustainable Value Chains in the Circular Economy on its Activities in 2022-2023

Submitted by the secretariat

Summary

At the twenty-eighth session, the Plenary decided to extend the mandate of the Team of Specialists (ToS) on Environmental, Social and Governance (ESG) Traceability of Sustainable Value Chains in the Circular Economy of UN/CEFACT until 2025 (Plenary decision 22-19). The 125th meeting of the Executive Committee on 20 November 2022 approved the extension of its mandate, as contained in document ECE/TRADE/C/CEFACT/2021/23/Rev.1, for the period 2023–2025 (ECE/EX/2022/L.17).

This report contains a comprehensive summary of the key deliberations of the ToS over the course of four meetings occurring between 2022 and 2023. The document discusses the ESG traceability landscapes in the United Nations Economic Commission for Europe (ECE) region, encompassing policies, legislative framework and institutional arrangements. Furthermore, it explores transformative pathways leading towards sustainability, focusing on corporate strategies and actions. The document concludes by presenting key outcomes and recommendations and outlining next steps.

Document ECE/TRADE/C/CEFACT/2023/24 is submitted to the twenty-ninth session of the UN/CEFACT Plenary for endorsement.



I. Overview of activities and key decisions

1. In 2022-2023, the Team of Specialists (ToS) on Environmental, Social and Governance (ESG) Traceability of Sustainable Value Chains in the Circular Economy held its second session, in hybrid format, on 6 October 2022, followed by three working meetings on 5 December 2022, 27 March 2023 and 9 May 2023. The second session and the working meetings were attended by 332 delegates and experts representing national government agencies, international organizations, non-governmental organizations, private sector participants (companies, industry associations, standard-setting bodies), academia and think tanks, each with expertise in textiles, agrifood and minerals.

2. This report summarizes key discussions of the ToS during the four meetings in 2022-2023, which were in line with its mandate to contribute to better, more informed decisions for sustainable production and consumption. The aim is to promote, facilitate and support policy and regulatory compliance through ESG traceability approaches and systems in sectors such as agrifood, fishery, garments and footwear, mining, transport and waste management. This ToS was created in 2021, replicating the success of the ToS on Sustainable Fisheries and broadening the scope to cover sustainable value chains in priority sectors for the circular economy.

3. The work of the ToS is directly relevant to the seventieth session of the United Nations Economic Commission for Europe (ECE), devoted to “digital and green transformations for sustainable development in the region of the ECE” and to the sixty-ninth session of the Commission on “promoting circular economy and sustainable use of natural resources in the ECE region”.

4. ESG monitoring and reporting is a topic of interest for both ECE and WTO member States. Sustainable development is part of the WTO founding agreement and was an overarching theme of the WTO 12th Ministerial Conference (MC12). The topic of traceability is also widely discussed during the Trade and Environmental Sustainability Structured Discussions. The WTO Agreement on Fisheries Subsidies, which was adopted at MC12, is fully in line with the United Nations Sustainable Development Goals (SDGs) and clearly recognizes the challenges of climate change, the SDGs implementation, and reiterates the need for alignment with WTO member objectives. The recently established United Nations Working Group on Transforming the Extractive Industries for Sustainable Development, which was chaired by the ECE in 2022, also identified traceability as one of the key areas of action.

5. At its second session held on 6 October 2022, the ToS made the following decisions:

Decision 22-01: The ToS noted that ESG traceability is a key enabler of digital and green transformations for sustainable development in the United Nations Economic Commission for Europe (ECE) region and beyond due to its overarching importance across supply chains, its long-lasting impact on the economy and the involvement of a wide range of stakeholders.

Decision 22-02: The ToS adopted the annotated provisional agenda for the second session (ECE/ToS-TSVCCE/2022/INF.1).

Decision 22-03: The ToS noted the progress on the policy paper “Enhancing Traceability of Products along International Value Chains for the Circular Economy and Sustainable Use of Resources” (ECE/TRADE/C/CEFACT/2022/8), which was developed in line with the conclusions of the 69th ECE session and is to be finalized for the seventieth session of the ECE in 2023.

Decision 22-04: The ToS highlighted the long-lasting economic benefits for countries with economies in transition of implementing ESG traceability across key priority sectors.

Decision 22-05: The ToS noted the report on the first session of the Team of Specialists on Environmental, Social and Governance Traceability of Sustainable Value Chains in the Circular Economy (ECE/TRADE/C/CEFACT/2022/24).

Decision 2022-06: The ToS decided to organize four working meetings in preparation for the next session of the ToS, with the following goals:

- (i) Finalize the policy paper “Enhancing Traceability of Products along International Value Chains for the Circular Economy and Sustainable Use of Resources” before the seventieth Commission session in April 2023;
- (ii) Identify the possible elements of a protocol to promote ESG monitoring and reporting in value chains across different key sectors;
- (iii) Support the implementation of ESG traceability; and
- (iv) Explore fundraising opportunities to support and expand the work of the ToS, in line with its mandate and terms of reference.

Decision 2022-07: During the twenty-eighth session of the UN/CEFACT Plenary, the ToS requested that its mandate be extended until 2025.

6. On 6 October 2022, Ms. Maylis Souque, Secretary General of the French National Contact Point to the Organisation for Economic Co-operation and Development (OECD), Advisor on Responsible Business Conduct to the French Ministry of Economics and Finance and Chair of the ToS, announced that she would step down following her appointment as Economic Counsellor, Permanent Mission of France to the OECD.

7. On 9 May 2023, the ToS appointed Mr. Christian Hudson, Lead of the Global Textiles Transparency Project at the German Agency for International Cooperation (GIZ), as the new Chair of the ToS.

8. At the twenty-eighth session, the Plenary decided to extend the mandate of the ToS on ESG Traceability of Sustainable Value Chains in the Circular Economy of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) until 2025 (Plenary decision 22-19). The 125th meeting of the Executive Committee on 20 November 2022 approved the extension of the ToS mandate, as contained in document ECE/TRADE/C/CEFACT/2021/23/Rev.1, for the period 2023–2025 (ECE/EX/2022/L.17).

II. Update on the work streams of the team of specialists

9. The ToS reported that the project on Traceability for Sustainable Garment and Footwear¹, jointly implemented by the ECE and the International Trade Centre (ITC) with the financial support of the European Union (EU), was acknowledged in 2022 by the European Commission as an immediately relevant tool for companies to fulfil their due diligence obligations. The ECE toolbox was further referenced in several EU instruments², evidencing its link with the attainment of EU policy objectives and regulatory framework.

10. As of July 2023, the ECE Call to Action for Enhancing Traceability and Transparency of Sustainable Value Chains in the Garment and Footwear Sector received over 100 pledges from garment and footwear actors committing to implement specific actions, representing more than 700 industry actors across 28 countries. Under the project, the latest completed blockchain pilots³ featured a regenerative jersey fabric T-shirt, and the first-ever yarn certified

¹ The ECE Traceability for Sustainable Garment and Footwear project website is available at <https://unece.org/trade/traceability-sustainable-garment-and-footwear>.

² Examples include the 2022 EU Strategy for Sustainable and Circular Textiles (DG ENV); 2022 communication on the EU Corporate Sustainability Due Diligence Directive proposal (DG JUST); 2022 EU guidance supporting companies to comply with due diligence legislation (DG INTPA); 2023 Report on the “Transition pathway of the EU textiles ecosystem” (DG GROW); and the 2023 Report of the Technical Working Group on Digital Product Passport: Landscape of Digital Product Passport Standards. See report at <https://zenodo.org/record/7728381#.ZBrYZMKZM2w> (Accessed 28 August 2023.)

³ The blockchain platform covers 18 use cases along the full spectrum of the value chain for cotton, leather and wool, involving 85 companies across 22 countries. The ECE is also working with the ITC to develop a platform to publicly visualize the use cases. For more information, see <https://resources.sustainabilitymap.org/unece-homepage/> and the report on the Blockchain Pilots Project for the Garment and Footwear Sector (ECE/TRADE/C/CEFACT/2022/9).

in compliance with the Better Cotton social and environmental criteria in the Samarkand cotton cluster, Uzbekistan. The ITC used data from various ECE pilot partners to visualize the value chains (stages, materials, actors) traced in the ECE blockchain platform against the ECE matrix for traceability and transparency. ITC used a dedicated platform, to be launched shortly.

11. The ToS launched a UN/CEFACT product circularity data project⁴ in January 2023. The project aims to advance circular performance in product value chains, with an initial focus on textiles and leather, by supporting the exchange of key data characteristics for product circularity. The objectives are to reuse existing standards, align with the EU Digital Product Passport (DPP) and use the relevant United Nations Core Component Library (UNCCL) subset. This project supports regulatory objectives, such as those under the proposed EU Ecodesign for Sustainable Product Regulation, introduced by the EU DPP. The project is also developing the business case for circularity by looking at the operational aspects of business models, thereby advancing reduction, reuse and recycling all along product value chains.

12. The ToS joined hands with the Economic Commission for Latin America and the Caribbean (ECLAC), the ECE, and Fashion Revolution to conduct a study on trade, import and disposal of second-hand clothing in Latin America⁵. In Chile, 39,000 tons of clothing is illegally dumped annually as waste in the Atacama Desert, which results in devastating consequences for the environment and local communities. The study provides recommendations to policymakers on relevant trade, customs and environmental regulatory measures to address this burning challenge. It is submitted to the Plenary for noting.

13. The new project at UN/CEFACT on critical raw materials (CRM)⁶ aims to increase verifiable, critical raw materials supply chain resilience and sustainability through the development of digital standards for data and trust. Experts from the ToS are called to contribute.

14. The ECE policy paper Enhancing Traceability of Products along International Value Chains for the Circular Economy and Sustainable Use of Resources is being edited for publication.

III. ESG traceability landscapes in the ECE region: policies, legislative framework and institutional arrangements

15. This part of the report highlights key discussions during the meetings on existing ESG traceability landscapes and legislative policies and the relevance of the priority sectors in the ECE region and globally. In the subsection on ESG monitoring and reporting, the report outlines the importance of efficient and effective trade policy frameworks and presents tools and legislations developed by ECE and several countries that promote sustainability performance. The subsection on incentives and barriers for ESG presents different incentive design frameworks and the main challenges in their implementation.

16. While the current linear economic model is being driven by growing demand for products and increasing complexity and fragmentation of value chains, traceability offers opportunities for countries engaging in the circular, digital and green transformations. Data on origin, composition and processing methods foster circular product design and address long term economic needs. Benefits for ECE programme countries include wider access to international markets and investment opportunities, thus fostering innovation and job creation in the local economies.

⁴ See UN/CEFACT Extension Textile and Leather BRS Part 2: Use case and CCBDA data structure supporting product circularity project site: <https://uncefact.unece.org/display/uncefactpublic/EXTENSION+TEXTILE+AND+LEATHER+BRS+PART+2%3A+Use+case+and+CCBDA+data+structure+supporting+product+circularity>.

⁵ ECE, “United Nations will launch a study on global second-hand clothing trade and disposal in Chile”, press release, 19 May 2023. Available at <https://unece.org/media/news/378856>.

⁶ See the UN/CEFACT project on Critical Materials Traceability and Sustainability, available at <https://uncefact.unece.org/display/uncefactpublic/Critical+Minerals+Traceability+and+Sustainability>.

17. Improving ESG traceability across critical sectors is a priority for promoting sustainable value chains in the circular economy. The current circularity rate is 8 per cent⁷, and the ECE ambition is to reach 10 per cent in the next two years. Governments play a leading role in establishing an enabling environment for progress towards the circular transformations by developing effective policy measures to foster traceability for circularity and supporting their broad uptake.

18. Garment and footwear, agrifood and minerals are among the key sectors in the ECE region and globally, as they are of relevance to the global economy and key in fighting climate change and advancing the circular, digital and green transformations. Europe and Central Asia's share in the global value chains of agricultural and fish production is 16 per cent, while this whole sector is responsible for 31 per cent of global greenhouse gas (GHG) emissions.⁸ The global apparel market produces 90 million tons of waste and the market is rapidly growing with a predicted 2 trillion in revenues in 2026. Eighty-one countries depend on mineral resource extraction and these countries represent 1/4 of global gross GDP and 50 per cent of the world's population. 50 per cent of the copper, gold, iron ore and zinc production is concentrated in areas with high water stress, like Central Asia.⁹

19. Traceability benefits countries and consumers by providing a higher level of protection for human health and the environment. It offers a better understanding of the value chain and promotes efficiency and resource management, allowing consumers to access accurate and reliable information. It empowers the risk management systems of businesses, offering them improved brand reputation, and fosters effective and efficient communication with business partners.

20. During the meeting discussions on the topic, experts addressed the following guiding questions:

- Which policies, legislative frameworks and institutional arrangements were proven to be successful in advancing ESG monitoring and reporting in global value chains of high priority sectors (e.g. agrifood, garment and footwear, and extractive industries)?
- What are the right incentives to put in place to spur ESG monitoring and compliance along the global value chains of such sectors?
- How should potential barriers to trade (such as ESG compliance hindering access to market and investment opportunities) be addressed, particularly for SMEs and vulnerable actors?

A. ESG monitoring and reporting

21. Efficient and effective trade policy frameworks rely on tools that allow governments, stakeholders, producers and consumers to trace and make reliable claims. Considering the complexity of value chains and the diversity of different standards, traceability is key to enabling stakeholders to measure and improve their trade processes.

22. The ECE offers a series of policy tools that can help foster and enhance traceability. For the garment and footwear sector, ECE Recommendation No. 46 provides guidelines and a call to action for governments, companies, decision makers and policymakers and facilitates the exchange of good practices and lessons learned. In addition, [the business and data model](#) (business requirements specifications, business process analyses, information exchange standards) developed by ECE and UN/CEFACT for the standardized definition and exchange of traceability and sustainability information can help to establish full traceability of finished textile and leather products from field to shelf. This model is currently being implemented through the ECE blockchain pilots.

⁷ Circle Economy, "The Circularity Gap Report", 2021. Available at <https://www.circularity-gap.world/2021> (Accessed 5 August 2023).

⁸ ECE, "Enhancing Traceability of Products along International Value Chains for Circular Economy and Sustainable Use of Natural Resources", (ECE/TRADE/C/CEFACT/2022/8).

⁹ Ibid.

23. The circular economy policy landscape in the ECE region is mainly shaped by waste management, with some traceability provisions mentioned in food safety guidelines. The full potential of the circular economy remains untapped and the concept of traceability as an instrument for the circular transition is generally unknown. The EU is leading efforts in the ECE region, transforming the traceability and circularity landscape in EU member states at a faster pace. Several countries around the world have launched new policies, tools and mechanisms to foster traceability of ESG-related information along the value chains.

24. In the EU, about 16 legislative acts (under development) aim to advance the sustainability performance of companies operating in critical sectors for the circular economy (e.g. agrifood, IT equipment, construction, textiles and clothing). These acts include the draft Corporate Sustainability Reporting directive, the draft Corporate Sustainability Due Diligence directive, the proposal for the Ecodesign for Sustainable Products Regulation and its Digital Product Passport, the Green Claims Directive, the revision of the Textile Labelling Rules and the revision of the Waste Framework Directive.

25. In France, the Anti-Waste Law for a Circular Economy (AGEC law) was referred to as instrumental in driving the circular transformation in the country by setting environmental, circular, traceability requirements and targets, including in textiles. These include recyclability, durability, microplastics content, hazardous substances, critical materials content and traceability for specific operations.

26. The UK strategy “Our waste, our resources: A strategy for England” focuses on maximizing resource use while minimizing waste and its impact on the environment. The UK plan to reach net-zero by 2050 relies on using both products and materials as services.

27. The Republic of Tajikistan adopted the National Development Strategy 2030, which is based on three core principles: prevention, industrialization and innovation, meaning reducing vulnerabilities and increasing efficiency of the use of national resources, while promoting green innovation. The Tajikistan Strategy for the Development of the Green Economy for 2023-2037 further focuses on zero waste production, recycling and efficient energy consumption.

28. China launched a new digital platform to identify and trace textile products throughout the supply chain, while increasing quality and quantity of recycled outputs.

29. In British Columbia, Canada, the application of blockchain technology enabled the sharing of data on carbon emissions and carbon credits for CRMs and extractive industry operations. This resulted in the collaboration of regional and local governments and actors, for which compliance with ESG requirements and access to advanced technologies posed important challenges. The purpose of the initiative was to apply digital identity technology, using verifiable credentials, in an open-source community, to effectively share performance-related sustainability data.

B. Incentives and barriers for ESG

30. Successful incentive design frameworks rely on standardized, interconnected and interoperable data, in conjunction with security rules and enforcement, to promote incentives and remove disincentives to sharing data. The following are two examples:

- (i) One design model is based on mandated investor reporting, where data is provided, obtained and transmitted from primary extractors to traders, suppliers, data analysts and, finally, to investors. Incentives are needed to stimulate actors from all levels to deliver necessary and accurate data.
- (ii) An alternative model relies on private sector, such as google software services. This incentive design would rely on the clear identification of the traceability goals and on maximizing the total societal value of the data being exchanged. This would require the participation of everyone along the data value chain and clearly defined rights and well-established trust.

31. The design process for any model would include the following steps: working on specific use cases, co-designing them with the users to meet their expressed needs, learning

from existing data sharing and data exchange models, and having a modular option-based design process to allow for a customized approach. Balanced governance of incentive design choices and their progressive adjustment would be essential.

32. One of the potential challenges to ESG monitoring and reporting is the willingness of stakeholders to control and capture value from data. This issue emphasizes the importance of designing a governance structure that balances the different interests of different actors—both now and in the future—to make sure that such governance structure is trusted. There will be a key role for organizations that check the quality, relevance and accuracy of data and prepare, maintain and amalgamate it into data products that are easily understood by users.

33. Another issue could be the high cost of generating and sharing data, especially high-quality data. High costs are also the issue for the verification, quality control and updating of data sets for user access. Many stakeholders have expressed fears that sharing internal data may harm their competitive position or breach legal data compliance rules. As a result, despite the huge amount of relevant data held by companies, public bodies or available through remote monitoring, this data is not accessible. Problems with data standards, searchability and interoperability also play a role.

34. Financial and non-financial incentives are systems that can advance ESG traceability monitoring and reporting; however it is critical to assess the adverse impacts and barriers potentially created by such mechanisms. The ToS has identified the following key considerations while designing incentives:

- Address greenwashing by putting mechanisms in place to prevent false claims and allow for digitally verifiable traceability and transparency tools;
- Set up cost-benefit incentives for upstream actors in the value chain to support accurate data collection, particularly from small and medium-sized enterprises (SMEs);
- Strike a balance between the complexity of ESG traceability and its use; and
- Consider access to market and investment opportunities, as well as consumer demand.

35. During the discussions, the ToS identified that the paramount incentives should come investors and governments. Foremost among these incentives is the integration of comprehensive traceability metrics. Subsequently, supplementary incentives encompass financial support for the creation of digital frameworks aimed at gathering traceability data, the establishment of harmonized product and activity identification systems tailored to specific sectors, the formation of inclusive and transparent industry-focused collectives or associations, and the facilitation of access to data pertinent to ESG.

36. Key drivers for traceability in the UK are extended producer responsibility, access to high quality data, policies that concern the whole market (such as a tax requirement for all plastic bottles that have less than 30 per cent recycled plastic) and sustainable investments. The ToS underscored the importance of promoting circularity in low carbon industries that support reduction, reuse, remanufacturing and recycling. Other approaches could be providing quality assurance with passports, underpinned by high quality data from international supply lines, and enabling innovation, which would allow SMEs and more vulnerable actors to enter the market with more innovative approaches.

37. During the meeting, the Republic of Tajikistan expressed that transition economies need support in these three areas: (1) capacity-building and increasing knowledge in the public sector about the concept and principles of a circular economy; (2) training future personnel on issues related to the circular economy; and (3) developing enabling policy measures and incentives for the private sector for ESG monitoring and reporting.

IV. Transformative pathways to sustainability: corporate strategies and actions

38. This part of the report summarizes the discussions on corporate strategies and actions for ESG monitoring and compliance towards sustainability. The first subsection on corporate

strategies and actions for ESG monitoring and compliance highlights key takeaways from sector-specific discussions and corporate challenges. The second subsection on ESG indicators and existing gaps presents challenges in streamlining ESG indicators and proposes a way forward. The third subsection on the role of advanced technology presents applications and tools that use blockchain to leverage the full potential of innovation and advanced technologies.

39. Due to the impact of the COVID-19 pandemic and uncertainty from geopolitical tensions, companies are facing increasingly complex challenges from opacity along global value chains in priority sectors to difficulties in end-to-end traceability of merchandise goods. The ToS emphasized that this is the critical moment for all stakeholders to join hands to advance the implementation of ESG monitoring and reporting along the value chains in the private sector.

40. Traceability and transparency mechanisms enable companies with reliable data collection, better resource management, substantiation of sustainability claims and more solid management of reputational risks.

41. Representatives from ECE member States, the private sector and other stakeholders addressed the following guiding questions:

- Which corporate strategies and actions for ESG monitoring and compliance are of relevance across industries and will effectively engage value chain actors?
- Which ESG indicators, methods and standards are available to support such strategies and actions? Are there any the gaps that need to be addressed?
- What roles can advanced technologies play? How can their potential be harnessed to benefit vulnerable actors, especially from developing and transition economies?

A. Corporate strategies and actions for ESG monitoring and compliance

42. In the mining sector, supply security goes hand in hand with sustainability for high-risk sectors (e.g. cobalt, copper, lithium) in developing and transition economies. In CRM value chains, these are the key questions to address when developing ESG monitoring and reporting mechanisms:

- (i) When it comes to supply data monitoring and sharing, should the private sector be willing to share production and trade data, apart from the traditional data that is disclosed in sustainability reports?
- (ii) In what ways can the public and private sectors collaborate to build a stronger and reliable data monitoring system? Is there a gap for collaboration in this space? What are the immediate benefits and what are the potential drawbacks?
- (iii) Considering the most recent regulations regarding the supply of critical minerals, which are intended to enable the energy transition, how should the issue of geographical production and processing be addressed?
- (iv) Going further, how should these regions be incorporated and prioritized in the dialogue, while ensuring leverage in global supply chains?

43. In the fast-changing textile and cotton sector, stakeholder needs to answer to mounting calls for supply chain visibility. Supply chain visibility will support companies to meet the regulatory requirements that investors and consumers demand. It will further bolster inclusive supply chains and market access for upstream actors (e.g. farmers and smallholders). The demand for increased supply chain visibility will require a certain level of traceability. In the cotton sector, for instance, this translates into data about the origin, transport, and environmental and social impacts of cotton farming. These are the key questions to address when developing ESG monitoring and reporting mechanisms:

- (i) What are the most promising (or proven) examples of functional ESG traceability in the textile and leather sector? Are there any that are inclusive of small-scale raw

material producers and SMEs downstream in the value chain? How can they be scaled up?

- (ii) The regulatory landscape in Europe and elsewhere is evolving quickly with regard to circularity, regulation of green claims, and corporate due diligence for this sector. Is there coherence across policy tools? If not, how can this be improved (e.g. through global policy dialogue platforms)? What are the risks if policies are not mutually reinforcing?
- (iii) Incentives – both financial and non-financial – are a critical requirement to make ESG traceability business as usual. What kind of incentives should be put into place in the textiles and leather sector? What has worked or not worked?

44. In the leather sector, certification is paramount to the collection of trusted information. However, physical traceability at the batch level poses a challenge, although it is a key to compliance with the new EU regulation on deforestation-free products and the draft EU directive on corporate sustainability due diligence, impacting all operators. In this sector, the data collected with traceability certifications will be a starting point to substantiate ethical claims, risk analysis on deforestation for leather hides and skins from certain regions such as South America, and on animal welfare. COTANCE¹⁰ and CEN/TC 289¹¹ launched an initiative to align leather traceability schemes and to work collaboratively with many key leather industry actors to define the minimum elements of traceability and evidence of verification for traceability certification scheme owners. Advanced technologies such as unique identification marks (barcodes and QR codes), which enable full product traceability, allow for synergies with the work of the ToS and UN/CEFACT regarding the need to have standardized data exchange and taxonomy.

45. In agrifood value chains, collaborative mechanisms and government initiatives were also identified as key to advancing the circularity agenda. Creating an effective minimum set of ESG traceability requirements could provide the initial baseline needed for a wide-scale implementation. For instance, in Australia the criteria for sustainability and quality overlap, creating a challenge for food exporters and an opportunity for governments to better regulate. In agrifood value chains, these are the key questions to address when developing ESG monitoring and reporting mechanisms:

- (i) What are the key environmental and social objectives to be attained (and/or negative impacts to be reduced) in this sector, along the full life cycle from primary production to consumption?
- (ii) How has traceability along the value chain served to reinforce efforts to attain the key ESG objectives in this sector, and what are the key traceability tools that have enabled this?
- (iii) What role is there for government research, investment, policymaking and implementation to reinforce voluntary standards, labelling and certification to increase the market share of food which reinforces ESG in this sector?

46. Food systems create substantial environmental impacts. Field-to-shelf traceability has played an instrumental role in measuring and reducing environmental impacts and GHG emissions resulting from land use change and agricultural production. Life cycle assessment evidence also demonstrates that impacts differ depending on product types. Gathering knowledge about environmental impacts at the product level is key and requires traceability along the value chains of food systems.

47. Traceability has achieved collaborative momentum in the private sector, including in the following areas: calculating the environmental footprint, recognizing content and materials within consignments, identifying geographical paths, and tracking the utility and life cycles of materials. Traceability can provide robust information on the processes of

¹⁰ European Confederation of the Leather Industry

¹¹ CEN is the European Committee for Standardization; CEN/TC 289 is the technical working group within CEN that defines voluntary standards for leather (terminology, sampling, test methods, requirements and characteristics to any intended end use in the field of raw hides and skins, tanned hides and skins and finished leather, with the typical shape given by the animal or part of it).

sourcing, designing, identifying sustainability hotspots, creating simulations, efficient recycling, mitigating risk, and these can support the decisions and trade-offs companies make throughout the value chain. This progress has reinvigorated not only the transport flow of materials, but also the reporting process to regulators, external stakeholders and consumers.

48. Due to the complexity of tracing activities, companies today still face the issue of lack of quality data, and attempting to collect all the data along the value chain is challenging and increases environmental costs. In view of this, the ToS suggested moving away from passive reporting to proactive use of data, and to collect only what is needed.

49. The ToS raised the issue of certification requirements that new regulations will generate for companies. Certification requirements should balance industry margins with the cost of certification. Third-party certification is paramount to substantiate sustainability claims. However, the criteria may vary and may not be homogeneous across countries, for instance defining cotton quality, organic or regenerative composition.

50. The ToS recommended that companies consider the actions below regarding data collection:

- Define the optimum amount of traced data required for decision-making;
- Consider how the data should be processed to provide relevant information for different stakeholders; and
- Increase analytical capabilities to assess the concrete benefits of each circular economy solution to make them more informative.

B. ESG indicators and existing gaps

51. The ToS presented use cases of sustainable farming practices in the cotton and textile sector of Uzbekistan and discussed how to best incorporate appropriate ESG indicators for the circular economy, especially for the environmental aspects. ESG indicators have played an important role in supporting the analysis of the energy and materials footprint for a baseline emission portfolio and in identifying opportunities to offset carbon emissions effectively.

52. Challenges remain in streamlining ESG indicators. Given the variety of existing ESG-related labels and methods for different materials (such as life cycle assessment indicators, global reporting initiatives and the Fashion Transparency Index), consumers may often find themselves lost among many ESG labels, leading to hesitation in trusting brands. Some companies conveniently greenwash themselves by selecting vague indicators or labels that favour misinterpretation and that are less committing.

53. The international organizations are engaged in ongoing efforts to push in the right direction. The ToS recognized the contributions of ECE and UN/CEFACT to standardize the traceability process and vocabulary in the textile and leather industry, as well as the European Commission's work on their Product Environmental Footprint methodology. The ToS also pointed out that timely progress in further streamlining the standards and indicators would be needed. It is also critical that these indicators be shared and acknowledged across organizations with clear specifications.

54. The ToS encouraged brands and companies, including SMEs, to create solutions together with their suppliers, to communicate and provide capacity-building support and to raise awareness of ESG issues and promote alignment with the SDGs. At times, companies find that their suppliers possess neither the necessary information, nor knowledge to understand and follow ESG commitments. Raising awareness is a long-term task. Some companies have already started doing so by scheduling regular meetings and training with their suppliers, strengthening the procurement requirement and passing the ESG agenda further along the value chain to all tiers.

55. Life cycle data collection along the value chain ensures effective ESG monitoring and reporting. To define ESG indicators, the ToS identified key considerations regarding the data definitions, the granularity of data requirements, the system boundaries versus product data, the rules of allocation, quantitative indicators, harmonized data collection methodologies, the

allocation of different impacts to different materials, simple parameters for data collection tailored to the audience, and communicable data for consumers.

56. For example, life cycles in the textile industry are usually short and predominantly linear. Tracing along the full material life cycle will help to determine appropriate solutions for implementation. When applying circular economy solutions along supply chains, the environmental impact can be reduced accumulatively by 70 per cent.¹²

57. Data accuracy and reliability can be ensured through international standards, government data, certified and accredited independent sources and accountability procedures. The various levels of interpretation in the value chain and the different ESG monitoring and reporting mechanisms may impact data accuracy (e.g. primary data versus aggregated data). Incentive structures will be key to reliable data collection, as well as rewards (e.g. premium discounts) and scoring mechanisms for data collectors.

58. Supply chain data must be collected considering the issues of granularity, verifiability and regulatory versus voluntary reporting schemes. For effective ESG monitoring and reporting, data generated from existing databases could be used in conjunction with common standards (e.g. the Global Reporting Initiative standard). As for data accuracy and reliability, governments can define the expectations and align them with the United Nations 2030 Agenda for Sustainable Development targets to deliver on intergovernmental outcomes.

C. The role of advanced technology

59. Successful traceability implementation depends on leveraging the full potential of innovation and advanced technologies—such as blockchains, artificial intelligence and the internet of things—as key mechanisms to improve connectivity among value chain actors. Advanced technologies can allow for real-time identification and tracking of products and their components across their entire life cycle and into their second and subsequent lives. Other traceability technologies, including alphanumeric codes, bar codes, radio frequency identification, geographic information systems, global positioning systems and digital product passports also provide users with relevant data for traceability.

60. To better trace the ESG indicators, reliability of data is key. The ToS presented applications and tools using blockchain technology. Because blockchains attach a time stamp, signed by the author—making it possible to have a trusted source of information—information recorded on a blockchain becomes immutable and auditable and actors who record information on the blockchain are also made accountable. Thus, information stored on blockchains can be provided as proof to legislators. Moreover, the fact that each actor is responsible for the transmission of the information will give other actors confidence in the shared information as a reliable source of data for compliance. In Uzbekistan, a traceability project using blockchain technology and QR codes has been successfully implemented in the cotton and textile sectors, in cooperation with the ECE and the International Finance Corporation (IFC).

61. The ToS stressed the importance of embracing the efficiency and trust of these advanced technologies in underpinning data exchange for traceability and transparency throughout the value chain. It also acknowledged UN/CEFACT achievements on business process analysis for textile and fibre materials (including leather, cotton, synthetics, wool and cashmere) where a collaborative business model has been used for blockchain pilot projects. Speakers offered the following two recommendations for new technologies and innovations:

- Consider the challenges of (i) the digital divide; (ii) the rebound effect and its environmental implications; and (iii) data privacy issues; and

¹² Based on research by the Finnish Environment Institute, presented by Susanna Horn at the second session of the ToS on 6 October 2022. The presentation was entitled “Traceability, circularity and sustainability - challenges and opportunities from different sectors”.

- Consider the difficulties in establishing effective strategies for the uptake of such technologies, especially for companies in developing countries and countries with economies in transition.

D. Net-zero carbon emission targets in value chains: from monitoring and disclosure to action

62. This part of the report outlines the discussed industry progress on monitoring and reporting approaches to carbon emissions and net-zero targets.

63. Industries are facing challenges in decarbonizing and achieving GHG reduction targets. Digital tracking and tracing can support value chain baseline and mapping exercises. It also supports the collection and disclosure of accurate, consistent and complete Scope 1, 2 and 3 GHG emissions data¹³. It is essential that corporate strategies reduce the carbon footprint in value chains, encourage low-carbon behaviour and channel further investments into decarbonization activities. The discussion addressed the question of how ESG traceability landscapes can contribute to meeting the climate challenge.

64. Around 38 per cent of global Fortune 500 companies have delivered a significant climate milestone or are publicly committed to do so by 2030. As value chains across various industries account for 70 to 90 per cent of emissions¹⁴, it is important that core stakeholders from across the ecosystem collaborate to support efforts to decarbonize—particularly in the areas of data transparency, sharing of best practices, investment, innovation and engagement with suppliers.

65. The ToS also presented the UN/CEFACT project Cross Industry Supply Chain Track and Trace, which aims to improve tracking of goods across complex supply chains. The project has supported companies in identifying gaps caused by missing or unavailable data and provided links between various identifiers to fix the trade-transport disconnect, increasing the transparency and interoperability of value chains and reducing environmental impacts from trade and transportation processes.

66. The ToS recognized the need to provide insights on monitoring and reporting approaches to support the development of roll-out plans for the achievement of reduction targets and the associated incentives and cost distribution among value chain actors. Moving forward, the ToS highlighted the significance of inclusiveness, with the following specific recommendations:

- Create incentives such as rewarding progress in the areas of improved corporate procurement practices, capacity-building and effective engagement and collaboration;
- Determine which monitoring and reporting approaches are suitable for a variety of countries and sectors; and
- Develop a reference framework for monitoring and reporting on net-zero carbon emissions targets, in line with the United Nations Framework Convention on Climate Change (UNFCCC).

¹³ Scope 1, 2 and 3 are categories of GHG emissions set by the Greenhouse Gas Protocol, which is a leading body creating standards and tools for measuring, managing and reporting GHG emissions. Scope 1 are emissions created directly by the company by their facilities, vehicles and tools used to manufacture and transport products; Scope 2 emissions are indirect, representing the energy the company purchases for their operations; Scope 3 are indirect, in that they are produced by the customer in using the product, during the afterlife of the product, and also includes emissions generated by company suppliers and their activities.

¹⁴ Based research by the WBCSD, presented by Anna Stanley at the second session of the ToS on 6 October 2022. The presentation was entitled “Net-zero carbon emissions targets in value chains: from monitoring and disclosure to action”.

V. Outcomes of the discussions of ToS and next steps

67. During the discussion on improving traceability of products along international value chains for the circular economy and sustainable use of natural resources, the ToS noted three pillars that governments can take action on:

Pillar I. Circular strategy: Defining strategic directions for the circular economy

- Assess the market scenario and market drivers in a targeted sector
- Tailor policies to the specifics of the target sector
- Set up a multistakeholder dialogue and partnership with industry actors
- Develop a circular economy strategy that supports adoption of circular economy business models

Pillar II. Circular actions and cross-sectoral connectivity: Introducing targeted policy measures

- Define a circular economy roadmap with checkpoints to assess progress
- Create an effective and efficient system of incentives, particularly for SMEs
- Support a national, globally connected, trading platform to connect value chain actors
- Provide information and support to SMEs
- Raise consumer awareness and provide education and incentives

Pillar III. From traceability to circularity: Enhancing the traceability environment for the circular transition

- Establish mandatory requirements on traceability, with a minimum criteria and data set
- Identify and analyse international best practices on traceability and circularity
- Develop common traceability standards for the collection and exchange of information
- Promote research and development to harness the potential of innovation
- Facilitate the adoption of digital tools and advanced technologies
- Encourage strong partnerships among organizations, investors, consumers and other stakeholders

68. The ToS identified the following key priorities for future work in the areas of policy, legislative and institutional arrangements: promoting policy coherence and alignment, studying interactions between circularity, sustainable food, energy and other sectors, and developing a set of principles for incentive design.

69. The ToS can play an active role in providing training and capacity-building for countries with economies in transition and low-income countries to develop and support projects for ESG traceability and the circular economy. Through these activities, the ToS will share knowledge on available tools for ESG monitoring and reporting and support alignment between different tools developed by the trade community. Delegates from the member States thanked the ToS during the meeting on 6 October 2022 and requested capacity-building support and guidance on the implementation of ESG monitoring and reporting.

70. The ToS noted the potential of a service-based approach to promote a circular economy, stable revenue and business systems. This approach would also be applicable to critical raw materials in support of the low carbon energy transition. The ToS further underscored the need for actions to improve transparency and inclusiveness in value chains, to improve due diligence and data quality and to provide competent and qualified assessments.

71. Following the results of the seventieth session of the ECE in April 2023, the ToS recommended the following:

- Call upon public and private sector actors to foster partnerships to integrate the proposed solutions and recommendations;
- Embrace more collaborative business models, effective incentive systems and targeted support measures in favour of SMEs and vulnerable actors along value chains, particularly in developing economies and economies in transition; and
- Explore fundraising opportunities to support and expand the work of the ToS, in line with its mandate and terms of reference.

72. The ToS emphasized the need for collaboration and the need to build a framework that brings different sectors and partners together while keeping inclusiveness and the importance of capacity-building in developing countries in mind. The ToS also highlighted the issue of potential environmental impacts from the digitalization of the entire value chain and other activities when promoting sustainable development and the SDGs.

73. The ToS received a proposal to further align the existing United Nations Fisheries Language for Universal eXchange (FLUX) standard with the UN/CEFACT Buy-Ship-Pay Reference Data Model to increase links with other data.

74. During the activities in 2022-2023, the ToS concluded that a proposal should be developed to create a guideline (protocol) that considers that ESG factors in value chains offer significant benefits to businesses and countries. The ESG factors cover a range of issues that can affect the performance and reputation of a business, including environmental impacts, labour standards, human rights and anti-corruption practices. Moreover, developing monitoring and reporting guidelines demonstrates a commitment to sustainable development, transparency and accountability. The guidelines protocol would do the following:

- (i) Target governments, building on ECE Recommendation No. 46¹⁵ for ESG monitoring, reporting and disclosure at the corporate level;
- (ii) Use existing research, looking at the link between ESG traceability and investor decisions and at the existing financial reporting regulations for companies;
- (iii) Be product driven, like the EU DPP, to support the alignment of both government and industry and alleviate the reporting burden;
- (iv) Develop guidance on ESG traceability measurement which is aligned with the indicators of the Sustainable Development Goals (United Nations 2030 Agenda); and
- (v) Consider the economic development challenges and trade implications that developing and transition economies could experience as a result of new legislation on ESG requirements.

¹⁵ Recommendation No. 46: Enhancing traceability and transparency of sustainable value chains in the garment and footwear sector (ECE/TRADE/463): <https://unece.org/sites/default/files/2022-01/ECE-TRADE-463E.pdf>.